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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,701	CHEN ET AL.	
	Examiner	Art Unit	
	JAE Y. LEE	2466	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-19,24,26-28 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-19, 24, 26-28, and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 February 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 July 2010 has been entered.

Response to Amendments

2. Claims 1-10, 20-23, 25, and 29 have been canceled.

Response to Arguments

3. Applicant's arguments with respect to claims 11-19, 24, 26-28 and 30 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “one or more receivers, one or more detectors, one or more recovery elements” set forth in claims 1, 30 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 11-14, 16, 18, 19, 24, 26-28, 30 are objected to under 37 CFR 1.75 because of the following informalities:

Claim 18 lines 3-4 recite "the internet packets". It is suggested that applicant changes "the internet packets" to – an internet packets –.

Claim 18 lines 18-19 recite “identifying that an extension header”. It is suggested that applicant changes “identifying that an extension header” to – identifying that the extension header –.

Claim 24 lines 14-15 recite “identifying that an extension header”. It is suggested that applicant changes “identifying that an extension header” to – identifying that the extension header –.

Claim 28 lines 14-15 recite “identifying that an extension header”. It is suggested that applicant changes “identifying that an extension header” to – identifying that the extension header –.

Claims 11-14, 16, 18, 19, 24, 26-28 recite “internet”. It is suggested that applicant changes “internet” to – Internet –.

Claims 11, 30 recites "A gateway support not comprising one or more receivers, one or more detectors, one or more controllers and one or more recovery elements, the gateway support node configured to … with the one or more receivers … with the one or more detectors … with the one or more recovery elements … with the one or more controllers …” However, this not a proper format of the claim limitation invoking 112 6th paragraph. It is suggested that applicant changes the claim limitation conforming the format of 112 6th paragraph. For instance, "one or more receivers for receiving a user data packet, one or more detectors for detecting the next header field, one or more recovery elements for recovering information, one or more controllers for controlling ingress of Internet packet.”

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-17, 26, 27, 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claims 11, 30, “one or more detectors, one or more recovery elements” are newly amended as structures to perform its corresponding function." The Examiner applies 112 6th paragraph to a claim limitation since i) the claim limitation uses a non-structural term that does not have a structural modifier, ii) the non-structural term recited in the claim is modified by functional language, and iii) the non-structural term recited in the claim is not modified by sufficient structure, material, or acts for achieving the specified function.

However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. The specification recites "GGSN (or router) detects hop-by-hop extension header (page 15 lines 5-6, 9-11, 24-27, page 16 lines 19-20, 23-26, page 19 lines 5-8), recovers information from hop-by-hop extension header (page 15 lines 12-15).” There is no specific structure or algorithm corresponding to the functions of detecting and recovery within the GGSN (or router).

Therefore, it is rejected under 35 U.S.C. 112, 2nd Paragraph because there is no disclosure or insufficient disclosure of the structure for performing the function recited in a claim limitation invoking 35 U.S.C. 112, sixth paragraph.

Claims 12-17, 26, 27 are rejected as being dependent on a rejected base claim 11.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. **Claim 11, 12, 15-18, 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA) and Morrow (US 7,522,601).

For claims 11, 18, 24, Rinne discloses a system and a method comprising:

- **a gateway support node comprising one or more receivers, one or more detectors, one or more controllers and one or more recovery elements, the gateway support node configured to** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets, col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option; the corresponding functions (or modules) implicitly exist to detect, recover the value from header and hop-by-hop extension header, so that QoS classifier, e.g., controller, classifies the packets destined for various bearers)
- **provide an interface between an external packet data communications network** (Fig. 3 data network (Internet)) **and a packet radio network** (Fig. 3 RNC), **the packet radio network (Fig. 3 RNC) providing a plurality of packet data bearers** (col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **for communicating the internet packets with nodes attached to the packet radio network each of the packet data bearers** (Fig. 3 RNC, UEs; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **being defined with respect to a source home address of nodes communicating the internet packets** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the

source and destination host address**), the gateway support node being arranged to receive an internet packet with the one or more receivers** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets)**,**

- **the internet packet comprising header field, the header field including a field identifying a source address of the internet packet, a field identifying the destination address of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address)
- **and a next header field identifying whether an extension header follows the header field, a type of the extension header, and whether the extension header includes a hop-by-hop extension header** (Fig. 11 next header, type; col 15 lines 2-5: IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc., lines 5-12: next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header; col 15 lines 12-16: type), **the hop-by-hop extension header comprising value field indicating that the remainder of the hop-by-hop header is provided for the gateway support node, the remainder of the hop-by-hop header extension header** (Fig. 11 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-

63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address),

- **to detect that the next header field of the internet packet includes a hop-by-hop extension header with the one or more detectors** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option), and
- **to detect the hop-by-hop extension header** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc), **and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field** (Fig. 11 value; col 15 lines 11-18: the options included in the hop-by-hop extension have a standard format of a type value, length and a value) **is for the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN)

- **to recover information from a field provided in the remainder of the hop-by-hop extension header with the one or more recovery elements for use in controlling egress and/or ingress of internet packets to the packet radio network in accordance with the information** (Fig. 3 3G-SGSN, 3G-GGSN, Fig. 11 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address; Fig. 5; col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3; col 8 lines 55-61: classified packets are provided by QoS classifier to various RNC buffers according to the differing classes and according to the various destination addresses),
- **to control ingress of internet packets** (Fig. 4A, 4B; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN; 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **from the external communications network** (Fig. 3 data network (Internet)) **to the packet data bearers of the packet radio network** (Fig. 3 RNC) **with the one or more controllers** (Fig. 3 3G-SGSN, 3G-GGSN; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN) **by detecting from the information field provided in the remainder of the hop-**

by-hop extension header (Fig. 6 IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address), **a source home address of a correspondent node communicating the internet packets** (col 7 lines 49-55: combination of packet classifier and the QoS classifier residing in the UTRAN or CN can be used to classify packets destined for various bearers of various mobile terminal according to differing classes, 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address), **and**

- **allowing ingress of the internet packets to the identified packet data bearer** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3)
- **the gateway support node being operable upon receipt of the internet packet** (Fig. 3, col 7 lines 57-63: 3G-SGSN, 3G-GGSN receives IP packets, col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and “latency counter” in IPv6 hop-by-hop option)

Rinne discloses all the subject matter of the claimed invention with the exception for **the remainder of the hop-by-hop extension header includes a home field**

providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network. whereas Rinne discloses IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc. and next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header (Fig. 11, col 15 lines 2-12). AAPA discloses **the remainder of the hop-by-hop extension header includes a home field providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network** (paragraph 0008: mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the remainder of the hop-by-hop extension header includes a home field providing a home address of a mobile node and using the source home address to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network** of AAPA to the system and the method of Rinne, thereby the remainder of IPv6 extension headers contains mobile node's home address. The motivation would have been to

facilitate to identify the appropriate bearer through which IP data packet can be routed to a CN attached to the GPRS network (AAPA paragraph 0008).

Rinne and AAPA disclose all the subject matter of the claimed invention with the exception for **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, to detect that the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** whereas Rinne and AAPA disclose mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network (Rinne Fig.11, col 15 lines 2-18, AAPA paragraph 0008). Morrow discloses **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read** (Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option)**, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information

packet on an interface which constitutes a layer 3 mobility-enabled edge router)**, to detect that the router alert option header in the hop-by-hop extension header (**Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option) **and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function)**, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, to detect that the router alert option header in the hop-by-hop extension**

header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node of Morrow to the system and the method of Rinne and AAPA, thereby, only mobility-enabled edge router, e.g., 3G-SGSN, 3G-GGSN, examines mobile node's home address in hop-by-hop extension header by utilizing hop-by-hop router alert option and "M" bitmap flag. The motivation would have been to increase the speed of information packet transmission and efficiency of communication on the network by implementing filtered router alert hop-by-hop option and filtered router bitmap flag (Morrow col 3 lines 25-50).

For claim 16 referenced by claim 11, Rinne discloses **a packet radio network operable to communicate internet packets between an external packet data network** (Fig. 3 data network (Internet)) **and nodes** (Fig 3 UEs) **associated with the packet radio network** (Fig. 3 RNC), **the packet radio network providing a plurality of packet data bearers for communicating the internet packets to and/or from the nodes attached to the packet radio network, the packet radio network including a gateway support node** (Fig. 3 RNC, UEs, 3G-SGSN, 3G-GGSN; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes).

For claim 30 referenced by claim 11, Rinne discloses **IPv6 extension header** (Fig. 11 IPv6 Extension Headers).

For claim 12, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN) **allowing ingress of the internet packets** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3) **if either the address in the source address field of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address) **or the address provided in the field in hop-by-hop extension header for the gateway support node corresponds to a packet data bearer** (Fig. 3, 11 col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and "latency counter" in IPv6 hop-by-hop option)

For claim 15, Rinne discloses

- **the gateway support node comprises a Gateway GPRS Support Node (GGSN), according to the General Packet Radio System standard** (Fig. 3 3G-SGSN, 3G- GGSN, 3G-Gateway GPRS Support Node)

For claim 17, Rinne discloses

- **the packet radio network (Fig. 3 RNC) complies with General Packet Radio System (GPRS) standard, the gateway support node comprising a Gateway GPRS Support Node (GGSN)** (Fig. 3 3G-SGSN, 3G-GGSN, 3G-Gateway GPRS Support Node)

10. **Claims 13, 14, 19, 26, 27** are rejected under 35 U.S.C. 103(a) as being unpatentable by Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA) and Morrow (US 7,522,601) as applied to claim 11, 18, 24 above, and further in view of Lee et al. (US 6,915,325).

For claims 13, 19, 26, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN) **receives the internet packet from the plurality of packet data bearers** (Fig. 3; col 8 lines 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes);
- **detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets** (Fig. 11; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from

an IP network comprising several different flows having a combination of the source and destination host address)

Rinne, AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address**. Lee discloses **a egress packet filtering in accordance with a destination address of the internet packets** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter) **and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address** (col 7 lines 22- 25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **egress packet filtering in accordance with a destination address of the internet packets, egress of the**

internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address of Lee to the system and the method of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

For claims 14, 27, Rinne discloses

- **the gateway support node** (Fig. 3 3G-SGSN, 3G-GGSN)
- **the address provided in the hop-by-hop extension header for the gateway support node is a legitimate destination address** (Fig. 6; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address)

Rinne, AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **allowing egress of the internet packets if either the address in the destination address field of the packet**. Lee discloses **allowing egress of the internet packets if either the address in the destination address field of the packet** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving

data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **allowing egress of the internet packets if either the address in the destination address field of the packet** of Lee to the system of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

11. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rinne et al. (US 6,845,100) in view of Applicant's Admitted Prior art (US 2006/0268819, hereinafter AAPA), Morrow (US 7,522,601), and Lee et al. (US 6,915,325).

For claim 28, Rinne discloses a system comprising:

- **receiving an internet packet comprising a header field, the header field including a field identifying a source address of the internet packet, a field identifying the destination address of the internet packet** (col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address) **and a next header field identifying whether an extension header follows the header and a type of the extension header, the next header field identifying that the extension**

header includes a hop-by-hop extension header (Fig. 11 next header, type; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc., lines 5-12: next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header; col 15 lines 12-16: type),

- **detecting that the next header field of the internet packet includes a hop-by-hop extension header** (Fig. 11 IPv6 Extension Headers, Hop-by-hop options header, Next Hdr; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc), **and**
- **recovering information from a field provided in the remainder of the hop-by-hop extension header for use in controlling egress and/or ingress of internet packets to the packet radio network in accordance with the information** (Fig. 6 Hop-by-hop options header, IPv6 header; col 15 lines 2-5:1P packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc; col 7 lines 57-63: IP packets from an IP network comprising several different flows having a combination of the source and destination host address; Fig. 5; col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3; col 8 lines 55-61: classified packets are provided by QoS classifier to various RNC buffers

according to the differing classes and according to the various destination addresses)

- **wherein, the controlling ingress of internet packets** (Fig. 4A, 4B; col 8 lines 25-26: QoS classification process may take place in the 3G GGSN; 49-55: classifying packets destined for various bearers of various mobile terminals according to differing classes) **from the external communications network** (Fig. 3 data network (Internet)) **to the packet data bearers of the packet radio network in accordance with the information** (col 7 lines 55-65, col 8 lines 25-28, 49-55, col 15 lines 5-18: QoS classifier classifies packets destined for various bearers of various mobile terminals according to different attributes such as IP source/destination address in header and “latency counter” in IPv6 hop-by-hop option),
- **allowing ingress of the internet packets to the identified packet data bearer** (col 8 lines 33-35: the packets are transferred by the MAC layer to the physical layer for transmission over the radio interface Uu of Fig. 3)

Rinne discloses all the subject matter of the claimed invention with the exception for **detecting from the information field provided in the remainder of the hop-by-hop extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop**

extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets. whereas Rinne discloses IP packet according to IPv6 including IPv6 header, flowed by optional IPv6 extension headers, followed by other headers, e.g., PCP, UDP, RTP, application headers, etc. and next header field in the IP v6 header packet that is used to indicate which header follows the IP header when other applications want to piggyback on the IP header (Fig. 11, col 15 lines 2-12). AAPA discloses **detecting from the information field provided in the remainder of the hop-by-hop extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets** (paragraph 0006, 0007: source and destination address of CN; paragraph 0008: mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network; since the source address of CN is included in the hop-by-hop extension header, the destination address is implicitly included in the hop-by-hop extension field same as the source address of CN as known to conventional art at the time of filing the instant application). Therefore, it would have been obvious to the

person of ordinary skill in the art at the time of invention was made to incorporate **detecting from the information field provided in the remainder of the hop-by-hop extension header field a source home address of a mobile correspondent node communicating the internet packets, using the source home address of the mobile correspondent node to identify the packet data bearer for communicating the internet packets to a correspondent node attached to the packet radio network, detecting from the information data provided in the hop-by-hop extension header field for the gateway support node a destination home address of a mobile correspondent node which is to be the destination of the internet packets** of AAPA to the system of Rinne, thereby the remainder of IPv6 extension headers contains mobile node's home address, e.g., source and destination addresses. The motivation would have been to facilitate to identify the appropriate bearer through which IP data packet can be routed to a CN attached to the GPRS network (AAPA paragraph 0008).

Rinne and AAPA disclose all the subject matter of the claimed invention with the exception for **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, detecting the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field**

indicating that the remainder of the hop-by-hop extension header field is for the gateway support node whereas Rinne and AAPA disclose mobile node's home address in a hop-by-hop extension header field such that GGSN identifies the appropriate bearer through which IP data packets can be routed to a CN attached to the GPRS network (Rinne Fig.11, col 15 lines 2-18, AAPA paragraph 0008). Morrow discloses **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read** (Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option)**, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router)**, detecting the router alert option header in the hop-by-hop extension header (**Fig. 4, col 5 lines 54-67, col 7 lines 14-21: hop-by-hop option of IPv6 has Filtered Router Alert Hop-by-Hop Option to indicate whether routers recognize the applicable bit flag, which is remainder of the hop-by-hop option) **and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router

closer to the correspondent performing mobility function)**, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** (Fig. 4, col 7 lines 4-9: "M" flag bit indicates slow-path routing is requested for an information packet on an interface which constitutes a layer 3 mobility-enabled edge router and such router is one close to the mobile device performing local mobility management functions or a router closer to the correspondent performing mobility function). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the hop-by-hop extension header including a router alert option header indicating that the hop-by-hop extension header is optional for a router to read, a value field indicating that the remainder of hop-by-hop header is provided for the gateway support node, detecting the router alert option header in the hop-by-hop extension header and the value field indicating that the remainder of the hop-by-hop extension header is provided for the gateway support node with at least one of the one or more detectors, and upon detecting the value field indicating that the remainder of the hop-by-hop extension header field is for the gateway support node** of Morrow to the system of Rinne and AAPA, thereby, only mobility-enabled edge router, e.g., 3G-SGSN, 3G-GGSN, examines mobile node's home address in hop-by-hop extension header by utilizing hop-by-hop router alert option and "M" bitmap flag. The motivation would have been to increase the speed of information packet transmission and efficiency of communication on the network by implementing filtered router alert hop-by-hop option and filtered router bitmap flag (Morrow col 3 lines 25-50).

Rinne , AAPA, and Morrow disclose all the subject matter of the claimed invention with the exception for **computer readable memory device comprising computer executable instructions forming a computer program to be executed by a data processor, egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address**. Lee discloses **computer readable memory device comprising computer executable instructions forming a computer program to be executed by a data processor** (col 9 lines 9-43), **a egress packet filtering in accordance with a destination address of the internet packets** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter) **and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address** (col 7 lines 22-25: filtering to match the mobile node home address and translating the IP destination address to the care-of address, 25-28: correspondent agent receiving data addressed to the mobile, existing firewall functions will match and translate the data according to the filter; col 4 lines 17: message traveling through the tunnel; the message travels through the tunnel only if matching the criteria of firewall). Therefore, it would have been obvious to the person of

ordinary skill in the art at the time of invention was made to incorporate **computer readable memory device comprising computer executable instructions forming a computer program to be executed by a data processor, egress packet filtering in accordance with a destination address of the internet packets, egress of the internet packets being allowed for internet packets having a legitimate destination address, and upon receipt of the internet packet and allowing egress of the internet packets if the gateway support node recognizes the destination home address as a legitimate home address** of Lee to the system of Rinne, AAPA, and Morrow, thereby filtering is performed in the GGSN. The motivation would have been to enhance the reliability of wireless communication by filtering message based on the destination.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae Y. Lee whose telephone number is (571) 270-3936. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Jae Y Lee/
Examiner, Art Unit 2466